

19. The method of claim 17 wherein the step of updating the gain settings includes increasing the gain settings in dark portions of the image and reducing the gain settings in bright portions of the image.

20. The method of claim 17 wherein the step of updating the gain settings includes dividing the captured image into a plurality of image regions, wherein each image region is associated with a particular gain setting in the gain map.

21. The method of claim 17 further including the step of analyzing each image region and updating the associated gain setting in response to clipping of the amplified sensor output signal in the image region.

22. An apparatus for capturing an image and generating a signal representing the captured image, comprising:

means for amplifying the signal in response to gain settings contained in a gain map,

wherein each gain setting is associated with a particular region of the captured image;

means for updating the gain settings contained in the gain map; and

means for generating a control signal indicating a particular gain setting to be applied to a portion of the signal representing the captured image.

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ABSTRACT OF THE DISCLOSURE

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A system for generating a digital output signal representing a captured image includes a sensor for capturing the image and generating a sensor output signal. A gain control amplifier is coupled to the sensor and receives the sensor output signal. The gain control amplifier has

controls for applying various levels of gain to the sensor output signal. An analog-to-digital converter is coupled to the gain control amplifier and generates the digital output signal representing the captured image. A processor is coupled to the analog-to-digital converter and the gain control amplifier. The processor provides a control signal to the gain control amplifier for adjusting the level of gain applied by the amplifier.

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